

M/LLW Box Survey Specifications Results

Normal Dimensions	<u>STC/IP-1</u> 14 – 73"L x 47W x 52"H 6 – 72"L x 46W x 47"H 1 – 77"L x 53W x 45"H 1 – 84"L x 48W x 48"H 1 – 75"L x 49W x 53"H	(B25) (ST-90) (6 pack) (SNL-744) (ST-90LA)
Volumes (83-96 CF)	18 – 90 CF 2 – 96 CF 1 – 93 CF	1 – 87 CF 1 – 83 CF

M/LLW Box Survey Specifications Results (cont'd)

Max Gross Weight (Contents & Pkg)	Ranged 7000 lbs to 11639 (83 – 96 CF)
Metal Thickness (GA)	19 – 12 gauge 3 – 14 gauge 1 – 12 gauge body/10 gauge lid

M/LLW Box Survey Specifications Results (cont'd)

Coatings	8 – paint 9 – urethane enamel 1 – galvanized 1 - epoxy	
Packaging Handling Features	12 – channels 5 – 3 risers 2 – I-beams	1 – 4 risers 1 – removable skid runners 1 – side lift

M/LLW Box Survey Specifications Results (cont'd)

Lid Handling Features	8 – none 5 – handles 4 – forklift channels 2 – retractable handles	1 – lugs w/handles 1 – O-rings w/handles 1 – O-rings 1 – lugs
Closure Mechanism	13 – Clips 4 – Bolts 1 – SS bolts	2 – T-bolts 1 – Butterfly clamps 1 - Clamps

M/LLW Box Survey Specifications Results (cont'd)

Number of Closure Devices	5 – 14 clips	1 – 20 clips	1 – 12 SS bolts
	4 – 12 bolts	1 – 16 clips	1 – 8 T-bolts
	3 – 12 clips	1 – 14 T-bolts	1 – 8 Butterfly clamps
	2 – 10 clips	1 – 14 clamps	
OR			
	Clips – 20 (1) – 16 (1) – 14 (5) – 12 (3) – 10 (2)	Bolts – 12 (4) SS bolts – 12 (1) T-bolts – 14 (1) T – bolts – 8 (1)	Butterfly clamps - 8 (1)
<u>Prices:</u>	\$449, \$545, \$551, \$625, \$628, \$900, \$1100, \$1115, \$1200, \$1706		

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon

Purpose:

This document is used for DOE purchases to provide the specification and regulatory requirements to purchase “new” 1A2 (open-head), USA DOT 7A / TYPE A, 55-gallon drums used for the storage and shipment of radioactive material, hazardous material, and waste.

Scope:

Intended use of these drums will be for the storage and transportation of hazardous materials and waste; specifically, materials requiring UN packaging or a USA DOT 7A / TYPE A approved container and as specified by the Department of Energy (DOE) user.

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Description of Base Drum

This specification covers the DOE requirement for procurement of 55-gallon open head (1A2) steel drums (*intended to contain liquids and solids*). Specified below is a description of a base drum for which a price shall be quoted. Additional options for various characteristics are also identified below in which those options may be substituted for characteristics in the base description. A cost (addition or credit) shall be provided for each option listed. This cost should be for the individual option only and not for the entire drum. The specification for the base drum procurement is as follows:

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Description of Base Drum (Cont'd):

- Drum type: Open Head (1A2)
- Drum capacity: 55-gallon (208 Liters)
- Material type: Carbon steel
- Liner: 4 – 10 mil liner
(Type A compliant w/liner when EPDM is used)
Manufacturer supply liner as tested
- Ring type: 12 – gauge (22 2/1" dia.)
- Bolt type: 5/8 inch by 4" (ASTM A307, SAE J429
Or Zinc Chromate, grade 2)*
Each bolt will have an 11/32-inch hole drilled 1/2 -inch O.C. from
the tip of the threaded end.
- Gasket: EPDM 1/16" (glued) OR Pinocchio style

*Ensure that manufacturer markings are placed on the head of each bolt (per ASTM A307).

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Description of Base Drum (Cont'd):

- Cover fitting: UR2 x 3/4" Ploy
- Rolling Hoops: Three
- Bungs: 2 required (2" & 3/4")
- Chime: Triple seam
- Inside Dia: 22.5 Dia.
- Overall Dims (w/o cover): 34-3/8"
- Dimension tolerances: +/- .375
- Ext paint color:
 - Head: White
 - Body: White
 - Bottom: White
 - Paint thickness: Mg. Suggested thickness (range (.4 - .7 mm)

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Description of Base Drum (Cont'd):

- Packing Group (solids) PG I
- Packing Group (liquids): PG II
- Specific Gravity: 1.7
- Max Wt (solids): 425 kg
- Hydrostatic Test Pressure: 150 kpa
- Minimum convexity
(head and bottom): 3/8-inch

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Test Required:

In accordance with 49 CFR Part 178, drums used for UN packaging and intended to contain a DOT 7A / Type A radioactive material (as defined in 171.8) must be validated with the following prescribed tests. Requirements are as follows:

- Water Spray Test (§173.465 b)
- Leakproofness (§178.604)
- Hydrostatic (§178.605)
- Free Drop Test (§173.465c) & (§178.603)
- Stacking Test (§173.465d)
- Penetration Test (§173.465e)

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Markings:

United Nations markings will be dual marked or labeled on each container as follows:

UN 1A2 / Y1.7 / 150 / *

UN 1A2 / X425 / S / *

*Year of manufacture

Each drum will also be stenciled with the purchase order, associated Lot number (6-inches from the left of the drum seam). If used as a Type A drum, the user will apply a label, which states: “USA DOT 7A TYPE A” and “RADIOACTIVE MATERIAL” (Mfg. Supplied loose w/ each order).

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Certifications:

The manufacturer of drums identified in this order will provide the DOE with copies of the Certificate of Conformance that specifies that all requirements of 49 CFR, §178.350, specifically USA DOT 7A / TYPE A, for each Lot delivered have been met.

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Regulatory Requirements:

- Information contained herein meets or exceeds the regulatory requirements of the Code of Federal Regulations, Title 49, Part 178 and 173.465 USA DOT 7A / TYPE A packaging. Supplier(s) will ensure that the requirements of the above referenced specifications have been met (i.e. providing closure instructions, certifications etc) and are in place. Upon request, either the Buyer or DOT may reproduce copies of associated documents for audit.
- Suppliers of containers certified as meeting DOT requirements shall have a documented quality assurance program implemented that meets at least the 10 criteria described in Title 10 of the Code of Federal Regulations, Part 830.120. Suppliers of containers certified to Type A specifications or to be used to contain TRU waste shall have a documented quality assurance program implemented that meets the requirements of NQA-1.

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Additional Requirements:

- For ease in handling during loading and unloading, drums will be offered for transportation palletized (4 to a pallet), with an individual, single-wall corrugated sleeve and stretch-wrapped to the pallet. Four drums to a pallet will then be secured together with one $\frac{3}{4}$ -inch nylon strap / band or equivalent (around the girth of the drums).
- Lining of all drums will be coated with any industry standard “rust inhibitive” coating. MSDS’ will be provided to the Laboratory on this coating material.
- The manufacturer will ensure that each new lot delivery will have the following documentation accompanying each delivery :
 - Manufacturers Certificate of Conformance
 - Closure Instructions (to include bolt torquing requirements and liner assembly for Type A configuration)

Specification for UN 1A2/Type A, Steel Drums – 55 Gallon (Cont'd)

Additional Requirements: (Cont'd)

- Material Safety Data Sheets (MSDS) for the rust inhibitor used.
 - Manufacturers UN Test Summary
 - Manufacturers USA DOT 7A / TYPE A Test Summary
- Buyer will ensure that proper DOE quality clauses and copies of DOE specifications accompany the order.
- Type A compliance is met with a 4 – 10 mil liner if an EPDM gasket is specified in the purchase order (a Pinocchio style gasket does not require a liner to meet Type A compliance). The label to be applied to the drum is “USA DOT 7A TYPE A” and “RADIOACTIVE MATERIAL” (3/8-inch black lettering with contrasting white background) and is supplied separately by the manufacturer and shipped with the drum / liner combination (do not apply label to drum when empty).